

## HEALTH SCIENCE EDUCATION

### COURSE DESCRIPTION

This course is an introduction to broad standards that serve as a foundation for Health Care Occupations and functions across health services. Units included are academics in health care communications systems, legal responsibilities, ethics, teamwork, and safety practices.

***It is strongly recommended that administration and guidance follow the scope and sequence and course recommendations as listed.***

**Recommended Credits:** 1

**Recommended Grade Level(s):** 9-11<sup>th</sup>

**Number of Competencies in Course:** 39

.

### **INTEGRATION/LINKAGES**

Math, Chemistry, Biology, Psychology, Sociology, English, SCANS, National Health Care Skill Standards, National Math Standards, National HOSA Guidelines, National Science Standards, and Industry Standards

## **HEALTH SCIENCE EDUCATION**

### **STANDARDS**

- 1.0** The student will know and apply the academic subject matter required for entrance within the Health Science Career Cluster.
- 2.0** The student will differentiate between the various services, careers, and departments in a health care setting.
- 3.0** The student will evaluate the responsibilities necessary to become a member of a professional organization and the HOSA team.
- 4.0** The student will explain the various methods of giving and obtaining information, demonstrate use of all forms of communication, and evaluate roles and responsibilities.
- 5.0** The student will evaluate legal responsibilities, limitations, and implications of actions within the health care delivery system.
- 6.0** The student will analyze the existing and potential hazards to clients, co-workers, and self and will prevent injury or illness through safe work and infection control practices.
- 7.0** The student will analyze and synthesize information related to the public health services and maintenance of health communities.
- 8.0** The student will perform skills necessary for physical assessment of health status and emergency care.

## **HEALTH SCIENCE EDUCATION**

### **STANDARD 1.0**

The student will know and apply the academic subject matter required for entrance within the Health Science Career Cluster.

### **LEARNING EXPECTATIONS**

The student will:

- 1.1 Analyze principles of basic anatomy and body organization in assessing health.
- 1.2 Perform mathematical operations to convert body temperature using Celsius/Fahrenheit methods and convert weight to metric measurement.
- 1.3 Use medical terminology, including root words, prefixes, suffixes, and abbreviations.
- 1.4 Evaluate the history of health care in respect to time, culture, religion, and regions.

### **PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET**

The student will:

- 1.1 Distinguish between function and basic components of body systems and relative terms related to body organization.
- 1.2 Calculate math conversions between English and metric from a given scenario using National HOSA Medical Math guidelines.
- 1.3 Demonstrate symbols, abbreviations, and medical terminology usage by implementing National HOSA Medical and Dental Terminology and Medical and Dental Spelling guidelines.
- 1.4 Demonstrate guidelines using medical and dental terminology and medical and dental spelling.
- 1.5 Develop a research paper illustrating the history of health care. Orally report on the history of health care using National HOSA Research/Persuasive Speaking guidelines.

### **SAMPLE PERORMANCE TASK**

- Compare structure and function of body systems.
- Obtain and convert height and weight between English and metric.
- Use flash cards and practice usage of symbols, abbreviations, and medical terminology in note taking.
- Using techniques of behavior modification, develop a plan for improving health status based on results of health appraisal.
- Differentiate individual, family, community, and environmental health.

## **HEALTH SCIENCE EDUCATION**

### **STANDARD 2.0**

The student will differentiate between the various services, careers and departments in a health care setting.

### **LEARNING EXPECTATIONS**

The student will:

- 2.1** Analyze the range of services offered to clients through various health care facilities.
- 2.2** Differentiate between various degrees, certifications, and registration for health care professions.
- 2.3** Investigate careers in the Therapeutic Services career cluster giving a definition for careers.
- 2.4** Differentiate between the careers in the Diagnostic Services career cluster and explain job duties of careers.
- 2.5** Compare and contrast careers in the Health Informatics career cluster and explain job duties of careers.
- 2.6** Identify careers in the Support Services career cluster and give definitions of careers.
- 2.7** Investigate the careers found in the Biotechnology Research and Development Career Cluster and share job duties.
- 2.8** Analyze the strategies for procuring a job in a health care profession, prepare a resume, complete a mock job application, and interview for that job.

### **PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET**

The student will:

- 2.1** Diagram a flow chart of services offered to clients/patients.
- 2.2** Research fees for services paid for and not paid for under managed care by implementing National HOSA Medical Math guidelines.
- 2.3** Connect careers with required certification, registration, or degree level.
- 2.4** Research a career from one of the cluster areas: Therapeutics, Diagnostic, Health Informatics, Support Services, or Biotechnology; use National HOSA guidelines Career Health Display to prepare a display.

- 2.5 Use the Internet to obtain information on a career and write a research paper to explain career.
- 2.6 Demonstrate interview, application, and resume writing skills necessary for job attainment by implementing National HOSA Job Seeking Skills guidelines.
- 2.7 Research job openings in the area, then, create a job resume and cover letter.
- 2.8 Role-play job interviewing with a partner with identification of strengths and weaknesses.
- 2.9 Utilize National HOSA Job Seeking Skills to prepare for a job in the chosen career area.

### **SAMPLE PERORMANCE TASK**

- Using a written scenario, identify areas of duplication between occupational and physical therapies, assigning modalities to appropriate services.
- Debate fee for services versus managed care by implementing National HOSA Biomedical Debate guidelines.
- Invite health care professionals from all career cluster areas to the classroom to explain their profession to students.
- Take field trips to health care facilities.
- Sponsor a career fair with all cluster areas represented.
- Have students interview a health care professional from one of the chosen career cluster areas and present their findings to class.

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### **STANDARD 3.0**

The student will evaluate the responsibilities necessary to become a member of a professional organization and the HOSA team.

### **LEARNING EXPECTATIONS**

The student will:

- 3.1 Interpret information obtained concerning professional organizations within health care.
- 3.2 Relate the background of HOSA, including purposes and principles of the organization creed, motto, emblem, and dress.
- 3.3 Diagram the organizational levels of HOSA.
- 3.4 Incorporate HOSA leadership skills into skills required for health care professionals.
- 3.5 Apply teambuilding concepts to the classroom, to a work setting, and to the school.

### **PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET**

The student will:

- 3.1 Research and present information from a professional organization.
- 3.2 Formulate a parallel between membership in HOSA as a high school student and membership in a professional organization.
- 3.3 Utilize National HOSA Extemporaneous Writing Guidelines and explain how HOSA will help you in your chosen profession.
- 3.4 Design a visual explaining some of the National HOSA Competitive Event Guidelines.
- 3.5 Evaluate interpretation of each team member's responsibilities in cooperative learning activities.
- 3.6 Using HOSA competitive event guidelines, evaluate participation in individual and team activities.

### **SAMPLE PERORMANCE TASK**

- Participate in HOSA National Recognition Program.

- Plan a HOSA week, and develop teams to market and teach HOSA background information to the community and new members.
- Choose a competitive event and teach the class about that competition.
- Participate in cooperative learning activities by including competitions in Parliamentary Procedure, HOSA Bowl, Biomedical Debate, Community Awareness and Career Health Display.

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### **STANDARD 4.0**

The student will explain the various methods of giving and obtaining information, demonstrate use of all forms of communication, and evaluate roles and responsibilities.

### **LEARNING EXPECTATIONS**

The student will:

- 4.1** Assess the importance of effective communication using rules of communication and appropriate listening skills, including sending and receiving information.
- 4.2** Adapt communication to individual needs (age and development specific) and multicultural and multilingual needs.
- 4.3** Differentiate between culture, ethnicity, and race; then, identify ways health care professionals can communicate in a respectful, unbiased manner.

### **PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET**

The student will:

- 4.1** Evaluate a written and oral report of role-play situations by implementing National HOSA Prepared Speaking guidelines.
- 4.2** Critique speaking skills by implementing National HOSA Extemporaneous Speaking guidelines.
- 4.3** Explain in written or oral presentation the definitions of culture, ethnicity, and race.
- 4.4** Create a health care plan to provide care for multicultural clients.

### **SAMPLE PERORMANCE TASK**

- Role-play procedural explanation between health care workers and client/patients, using communication rules and listening skills.
- Using role-play, explain given procedure to pre-schooler, elderly, Spanish speaking and hearing impaired client/patient.
- Adapt a procedure to assist client/patient with cultural needs and language requirement. Write an oral/written report using National HOSA Creative Problem Solving guidelines.
- Use National HOSA Chapter Newsletter guidelines and create a healthy newsletter for people of another language or culture.

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### **STANDARD 5.0**

The student will evaluate legal responsibilities, limitations, and implications of actions within the health care delivery system.

### **LEARNING EXPECTATIONS**

The student will:

- 5.1** Define the qualities of a successful health care professional.
- 5.2** Examine legal aspects of client/patient care, including HIPPA guidelines, confidentiality, consent, and negligence.
- 5.3** Define standard of care and explain the purpose of professional code of ethics.
- 5.4** Analyze legal requirements in documentation.
- 5.5** Analyze the Patients' Bill of Rights and compare the needs of client/patient who have cultural, social, and ethical differences in regard to the Patients' Bill of Rights.

### **PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET**

The student will:

- 5.1** Compare the qualities of a health care professional to maintaining legal and ethical standards.
- 5.2** Analyze consent forms, facility policies, and procedure and patient confidentiality.
- 5.3** Compare and contrast code of practice for varied health care professionals
- 5.4** Evaluate and report on a medical television program, documenting various legal issues.
- 5.5** Evaluate, research, and report on patient confidentiality by implementing National HOSA Research Persuasive Speaking guidelines.
- 5.6** Interview a health care lawyer. Report on legal requirements for documentation.
- 5.7** Research facility's safety policy and procedures for clients/patients who use English as a second language

### **SAMPLE PERORMANCE TASK**

- Role-play legal and ethical issues in health care to determine best outcome.
- Obtain a malpractice case study from the Internet and debate the case in a mock trial.
- Debate malpractice and liability issues following National HOSA Biomedical Debate guidelines.
- Apply Patients' Bill of Rights to the health care setting and identify way in which client confidentiality may be broken.
- From a written scenario/medical record, identify errors in documentation.
- Research social, cultural, and ethical backgrounds to determine varying aspects of needs.

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### **STANDARD 6.0**

The student will analyze the existing and potential hazards to clients, co-workers, and self and will prevent injury or illness through safe work and infection control practices.

### **LEARNING EXPECTATIONS**

The student will:

- 6.1** Use Standard Precautions and OSHA Standards to control the spread of infection, including aseptic techniques such as hand washing, personal protective equipment, isolation, and personal hygiene.
- 6.2** Apply principles of body mechanics, including proper lifting techniques, positioning, moving, and transferring.
- 6.3** Employ emergency procedures and protocols regarding fire and electrical hazards and hazardous materials.
- 6.4** Assess safety practices that are related to safety of clients in a health care facility.
- 6.5** Identify the factors that affect microbial growth and methods for destroying them.

### **PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET**

The student will:

- 6.1** Demonstrate safety practices using OSHA Standards.
- 6.2** Correctly don and remove personal protective equipment.
- 6.3** Evaluate student demonstration of body mechanic principles by implementing National HOSA guidelines for Nursing Assistant and Physical Therapy.
- 6.4** Demonstrate, correctly, proper hand washing.
- 6.5** Role-play hazardous situations in a health care facility that involves fire, flooding, and other emergencies.
- 6.6** Assess safety practices in a health care setting for incorrect procedures. This can be role-played in the classroom using scenarios.
- 6.7** Create something visual to explain the chain of infection.
- 6.8** Analyze asepsis techniques and explain uses of both.

### **SAMPLE PERORMANCE TASK**

- Using knowledge of Standard Precautions and OSHA Standards, practice skills necessary to prevent the spread of infection.
- Utilize National HOSA Nursing Assisting guidelines and perform hand washing procedure.
- Analyze role-playing situations and errors in body mechanic usage.
- Role-play hazardous situations in a health care facility that involves fire, flooding, and other emergencies.
- Apply OSHA Standards to given scenario of environmental hazards. Plan and implement a mock emergency disaster involving the community.

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### **STANDARD 7.0**

The student will analyze and synthesize information related to the public health services and maintenance of health communities.

### **LEARNING EXPECTATIONS**

- 7.1 Compare and contrast the agencies and available services or careers within the health and human services department.
- 7.2 Investigate the history of the public health services and relate how the services have improved lives in their communities.
- 7.3 Analyze statistics from the Centers for Disease Control and Prevention and other sources for identification of prevalent health issues in your community.
- 7.4 Create an educational plan for community health issues that are preventable.
- 7.5 Create an emergency plan for the following potential threats: natural disaster; severe weather; bioterrorism; chemical, radiation, and biological agents.

### **PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET**

- 7.1 Develop an organizational chart of all agencies and services for the Department of Health and Human Services with related careers for each area.
- 7.2 Create a time line of history of public health services.
- 7.3 Critique public health services for effectiveness and share findings in a written or oral presentation.
- 7.4 Evaluate community health statistics and develop a graph explaining results.
- 7.5 Utilize National HOSA Health Education guidelines and develop an educational plan for an issue specific to your community.
- 7.6 Research potential threats in your community and design a community plan for the areas.

### **SAMPLE PERORMANCE TASK**

- Research federal, state, and local agencies, including departments of health and human services.
- Research on the Internet the agencies and services offered by the U.S Department of Health and Human Services, then, present the information in an oral presentation.

- Invite personnel from the public health department to speak to the class.
- Invite personnel from the U.S. Public Health Services Commissioned Corp into your classroom.
- Investigate CERT training in your community and have a guest speaker into the classroom.
- Utilizing National HOSA Public Service Announcement guidelines, develop a public service announcement (PSA) to present to school and community on a health issue in the community and services available to prevent or improve the condition.
- Utilize National HOSA Health Education guidelines to identify and plan an educational session for an area in your community that you deem a public health or wellness issue.
- Utilize National HOSA Public Health Emergency Preparedness guidelines and design an emergency plan for a natural disaster or a disaster caused by people.
- Investigate the Medical Reserve Corps and develop a plan where a high school student can be involved.

## **HEALTH SCIENCE EDUCATION**

### **STANDARD 8.0**

The student will perform skills necessary for physical assessment of health status and emergency care.

### **LEARNING EXPECTATIONS**

- 8.1** Demonstrate principles of first aid application in emergency conditions, such as bleeding, shock, poisoning, burns, heat, cold exposures, musculoskeletal injuries, and sudden illness.
- 8.2** Demonstrate cardiopulmonary resuscitation emergency procedures.
- 8.3** Measure vital signs.
- 8.4** Perform health assessment, including measures such as height, weight, nutritional analysis, and psychosocial skills.

### **PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET**

The student will:

- 8.1** Evaluate demonstration on the principle of first aid using National HOSA First Aid and/or CPR guidelines.
- 8.2** Using National HOSA CPR guidelines, evaluate a cardiopulmonary resuscitation demonstration.
- 8.3** Using National HOSA Nursing Assisting guidelines, measure and record vital signs. Evaluate the demonstration.
- 8.4** Perform a nutritional assessment using patient's height, weight, age, activity, and stress factors.
- 8.5** Evaluate adequacy of diet comparing diet history/diary to assessed caloric/nutrient needs.

### **SAMPLE PERORMANCE TASK**

- Using food guide pyramid, analyze a food diary and devise appropriate changes to meet needs.
- Perform a nutrition assessment calculating estimated energy needs. Using ADA exchange lists, design a meal plan for 3 meals and 2 snacks.